CLAIMS:

1. A method of making a fiberoptic light guide, comprising the steps of:

supporting an elongate fused fiberoptic rod in a vertically disposed position, said elongate rod having opposite ends and a mid-section located therebetween;

heating only said mid-section of said elongate fused fiberoptic rod to soften said mid-section such that said mid-section elongates under the force of gravity;

discontinuing said heating step when said fused rod elongates to a predetermined set point to prevent said mid-section from further stretching and to permit said mid-section to cool; and

after said mid-section cools, cutting said elongate fused fiberoptic rod at said stretched mid-section to provide a pair of fiberoptic light guides with tapered tips.

2. A method according to claim 1, wherein, before said heating step, said elongate fused fiberoptic rod is cylindrical and has a substantially constant diameter throughout its length, and wherein each of said pair of fiberoptic light guides formed form said elongate fused rod has a diameter substantially identical to said diameter of said fused rod except at said tapered tips which have reduced diameters.

3. A method according to claim 1, wherein a gas fired torch providing a small high temperature flame is directed in a transverse direction at said fused rod during said heating step to heat only a small localized section of said fused rod so that stretching of said fused rod is confined to said small localized section which forms said tapered tips and so that softening and stretching of any other part of said fused rod is prevented.

4. A method according to claim 5, further comprising the step of rotating said fused fiberoptic rod about its central longitudinal axis during said heating step so that said small localized section of said fused rod is heated evenly by said small flame.

5. A method according to claim 6, wherein, during said heating step, said small flame is spaced about 2 to 3 inches from said fused rod in a direction perpendicular to said central longitudinal axis of said fused rod.

6. A method according to claim 1, wherein said set point is reached when a portion of said mid-section reduces in diameter to about .05 inch.

7. A method according to claim 1, further comprising the steps of: cutting both ends of one of said formed light guides to provide said light guide with a desired length and to provide said tapered tip with a desired end surface; and bending said

formed light guide adjacent said tapered tip to provide a light guide having a bent distal end.

8. A method according to claim 7, wherein said formed light guide has a substantially constant diameter within a range of about 13 to 8 mm from a proximal end thereof through said bent distal end except at said tapered tip in which said end surface has a diameter within a range of about 8 to 4 mm.

9. A method according to claim 8, wherein said tapered tip is limited to about 10 mm in length.

10. A method according to claim 1, wherein said tapered tip is formed such that it tapers at an angle of about 15° from said central longitudinal axis of said fused rod.

11. A method according to claim 7, further comprising the steps of: grounding and polishing both of said cut ends of said formed light guide after said bending step; and securing an end fitting to said end of said formed light guide opposite said bent distal end.

12. A method of making a fiberoptic dental light probe including the steps of: inserting a bundle of optic fibers into a glass cladding having a predetermined outer

diameter; heating said cladding and optic fibers; and drawing said cladding and optic fibers to fuse said bundle of optic fibers together and to seal said bundle of optic fibers within said cladding thereby forming an elongate fused fiberoptic rod; said fused fiberoptic rod having an outer diameter less than said predetermined outer diameter of said glass cladding; wherein the improvement comprising the steps of:

supporting said elongate fused fiberoptic rod in a vertically-disposed depending position from a rotation device and rotating said fused fiberoptic rod about its central longitudinal axis, said elongate rod having opposite ends and a mid-section located therebetween;

while said fused rod is being supported and rotated by said rotation device, heating only said mid-section of said elongate fused fiberoptic rod with a small high temperature flame directed in a transverse direction at said fused rod from a gas fired torch to soften said mid-section to an extent that said mid-section is caused to stretch and elongate under the force of gravity;

discontinuing said heating step when said fused rod elongates to a predetermined set point to prevent said mid-section from further stretching and to permit said mid-section to cool; and

after said mid-section cools, cutting said elongate fused fiberoptic rod at said stretched mid-section to provide a pair of fiberoptic light probes with tapered tips.

13. A method according to claim 12, wherein, during said heating step, said small flame is spaced about 2 to 3 inches from said fused rod in a direction perpendicular to said central longitudinal axis of said fused rod.

14. A method according to claim 12, wherein when said set point is reached, a most reduced portion of said stretched mid-section reduces in diameter to about .05 inch.

15. A method according to claim 12, further comprising the steps of: cutting both ends of one of said formed light probes to provide said light probe with a desired length and to provide said tapered tip with a desired end surface; and bending said formed light probe adjacent said tapered tip to provide a light guide having a bent distal end.

16. A method according to claim 15, further comprising the steps of: grounding and polishing both of said cut ends of said formed light probe after said bending step; and securing an end fitting to said end of said formed light probe opposite said bent distal end.

17. A fiberoptic dental light probe, comprising:

a probe light guide body made from a single continuous fused fiberoptic rod having an outer glass cladding which provides a

seal for a bundle of fused optic fibers, said body having an elongate cylindrical proximal end, a distal end having a tapered tip, and an arcuate bent section interconnecting said ends;

said elongate proximal end of said body having a substantially constant diameter and said arcuate bent section and distal end having a diameter substantially equal to said proximal end except at said tapered tip which is reduced in diameter.

18. A fiberoptic dental light probe according to claim 17, wherein said tapered tip is limited to about a 10 mm length of said distal end, and wherein said tapered tip tapers at an angle of about 15° from a central longitudinal axis extending through said tapered tip.

19. A fiberoptic dental light probe according to claim 18, wherein said diameter of said proximal end, arcuate bent section, and distal end is within a range of about 13 to 8 mm except at said tapered tip which has an end surface with a diameter within a range of about 8 to 4 mm.

20. A fiberoptic dental light probe according to claim 19, wherein said distal end extends at an angle of about 60° from a longitudinal axis of said proximal end.